

ABSTRACT OF THE DISCLOSURE

A multi-tier, master-slave control network has a matrix architecture for facilitating monitoring, command and control of the mid- and lower-tiers of the control network. A

5 supervisory network is connected to a hierarchical master-slave control network, and includes a set of supervisory nodes connected to various different buses of the main hierarchical master-slave control network. In one embodiment, the supervisory network comprises a multi-master data bus, and each of the supervisory nodes can control and communicate across the supervisory data bus in a manner similar to a local area networks such as an Ethernet. In another

10 embodiment, the supervisory network is a master-slave network, with a supervisory master node controlling a set of supervisory slave nodes, each of which connects to one of the lower-tier buses. The matrix architecture created by the addition of the supervisory network allows convenient monitoring of the lower-tier buses by the first-tier master node. The supervisory

15 nodes may provide redundant backup control for the data buses which they monitor. Redundant backup for the master node on each data bus is also provided by outfitting the slave nodes with means for detecting a failure of the master node and for taking over for the master node upon a failure.